

# U.S., Mexico Deepen Economic Ties

By Jesus Cañas, Roberto Coronado and Robert W. Gilmer

**G**lobalization has become a widely used term to describe the forces knitting economies closer together. For the United States and Mexico, it's just a new word for an old phenomenon. The two economies—one highly advanced, the other still developing—have for decades been on a path toward ever greater integration.

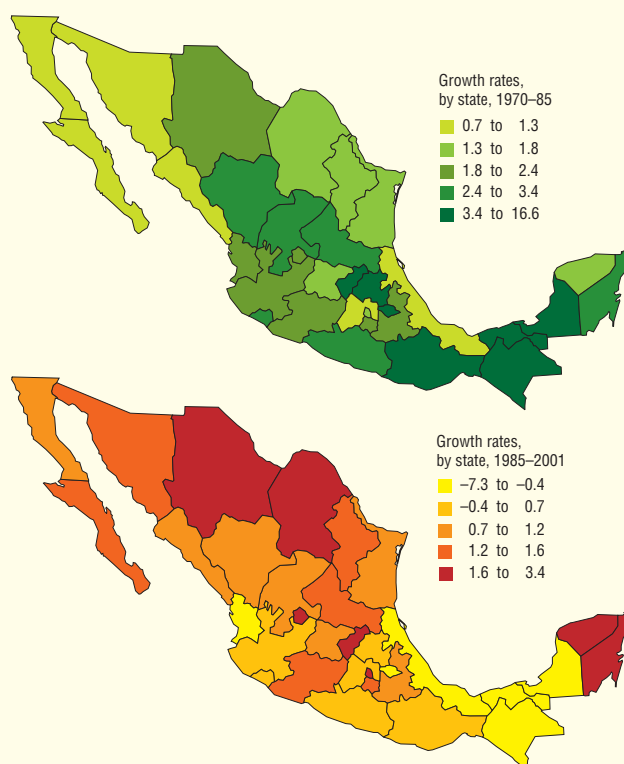
The U.S. is Mexico's top trading partner by far. About 88 percent of Mexico's exports go to the U.S., and 56 percent of its imports come from U.S. sources. At the same time, 14 percent of U.S. exports go to Mexico and 11 percent of imports come across the Rio Grande. Perhaps more important, U.S.–Mexico trade has grown exponentially since the signing of the North American Free Trade Agreement (NAFTA), growing from \$89.5 billion in 1993 to \$275.3 billion in 2004, a threefold increase.

Americans are the biggest investors in Mexico, further evidence of NAFTA pulling the two countries together. Since 1994, the U.S. has accounted for 62 percent of all foreign direct investment in Mexico.

The two economies are also linked by the flow of Mexican immigrants to the U.S. and the remittances they send back home to their families. The approximately 10 million Mexican nationals who reside in the U.S. sent back an estimated \$20 billion in 2005, an amount equivalent to 3 percent of Mexico's GDP.

The U.S. and Mexican economies have become increasingly synchronized. The coincident indexes for economic activity for both countries show that the degree of synchronization since 1993 is about a third higher than it was in 1980–93. The two economies now march almost in lockstep.<sup>1</sup>

**Chart 1**  
**Mexico's Economic Growth Shifts to the North**



SOURCE: Daniel Chiquiar, "Globalization, Regional Wage Differentials and the Stolper–Samuelson Theorem: Evidence from Mexico," Federal Reserve Bank of Dallas conference, Nov. 18, 2005.

The facts of U.S.–Mexico economic interaction are clear, but new questions continue to arise. How is China affecting trade between the countries? What has been the impact of NAFTA on Mexico's economic growth, specifically on regional wages? Is the maquiladora industry tied to the U.S. business cycle? Are remittances reducing poverty levels in Mexico? What skills does the typical Mexican immigrant bring to the U.S.?

In November 2005, researchers from the U.S. and Mexico gathered in Houston to address these issues at a Dallas Fed conference, "The U.S. and Mexico: Are We Still Connected?" The presentations pointed to even greater interdependence for the two

economies, a conclusion in sync with the worldwide trend toward increasing globalization.

## U.S.–Mexico Trade

Mexico opened its economy to trade in two important steps: joining the General Agreement on Tariffs and Trade in 1985 and signing NAFTA in 1994. Reducing trade barriers represented an epochal change in Mexican policy, and it has brought a sustained increase in the inflow of foreign direct investment, made the country more competitive and insulated it against external shocks.

How have two decades of market opening impacted Mexicans' pay? Daniel Chiquiar, a researcher from Banco de México, considered the role of trade in changing the distribution of wages in Mexico.

Several economic geography models have noted that Mexico's trade liberalization had dramatic impacts that differed greatly by region, especially in manufacturing. The traditional Mexico City factory belt, located in the middle of

the country, was optimal for a closed economy. After 1985, central Mexico lost at least some of its advantage. Led by maquiladora expansion, manufacturing employment and wages grew sharply in the states close to the U.S., and these gains came at the expense of the center of the country (*Chart 1*).

Chiquiar entered the debate by dividing Mexico into five regions and classifying them according to the strength of their ties to globalization through trade, migration and foreign direct investment. He treats globalization as a regionally heterogeneous shock to Mexico's economy, with a slowly operating adjustment mechanism. Thus, globalization's effects may be felt first and

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most strongly in regions with closer ties to the international economy.

Chiquiar showed that in regions with significant trade ties, wage inequality declined. Other regions, less tied to trade, saw inequality rise for reasons possibly unrelated to trade. Chiquiar concluded that further diminishing wage inequality will require the rest of the country to strengthen its linkages to the global economy.

Forming the backbone of U.S.–Mexico trade are programs of temporary imports to be re-exported, which bring parts into Mexico and return assembled products to the U.S.<sup>2</sup> Industrial goods make up 82 percent of Mexico's exports to the U.S. and 91 percent of imports from the U.S. According to Enrique Dussel-Peters, economics professor at Universidad Autónoma de México, about half of U.S.–Mexico trade is considered intra-industry trade, again mostly due to temporary imports. Mexico's intra-industry trade with the U.S. achieved its highest level in 2000 and has declined since then, while intra-industry trade with countries such as China is substantially lower.

These interconnections suggest the maquiladoras are closely tied to the U.S. industrial sector. Gustavo Félix Verduzco, professor at Universidad Autónoma de Coahuila, investigated the degree of synchronization between the U.S. business cycle and the maquiladoras, finding that the Mexican plants' production and employment are sensitive to relative wages between the U.S. and Mexico and fluctuations in the U.S. economy.

Félix Verduzco also concluded that the

economies of northern Mexico's border states, where the maquiladora industry is concentrated, are more affected by U.S. business-cycle fluctuations than the rest of the country.

The U.S. has long been the chief trading partner for Latin America, and the rise of China as an industrial power has posed a new and significant threat to this relationship. U.S. imports from China grew 12 percent from 2000 to 2003, while U.S. imports from Latin America grew 2.7 percent, including 2.2 percent from Mexico.

José Ernesto López Córdova, an economist at the Inter-American Development Bank, conducted a study of several scenarios for the sensitivity of Latin American exports to competition from China in the U.S. market, particularly the likely response to changes in the prices of Chinese exports.

López Córdova estimated that a 1 percent decline in prices for Chinese exports to the U.S. would increase U.S. imports by 3.7 percent, while Latin American exports to the U.S. would drop 0.1 percent. The Latin American losses are concentrated in manufacturing, especially leather, textiles and apparel.

A scenario with a 20 percent revaluation of China's currency results in Chinese exports to the U.S. falling 22.1 percent, or \$43 billion, although overall U.S. imports fall only 1.7 percent, or \$24 billion. An increase of 0.5 percent in Latin American exports to the U.S. partly fills the gap. South America gains the most, with leather, textiles and apparel again the sectors most sensitive to price changes.

López Córdova noted that China has been able to compete in the U.S. despite high tariff barriers and textile quotas, largely due to strong productivity gains. These productivity gains explain perhaps half of Latin America's U.S. export losses and reinforce the need for regional fiscal, labor, energy and other reforms.

Sebastián Royo, associate professor of government at Suffolk University–Boston and director of Suffolk University's Madrid campus, further discussed the need to reform political and economic institutions to take advantage of free trade agreements. He compared the integration of Spain and Portugal into the European Union (EU) with Mexico's integration into the rest of North America under NAFTA.

Spain went from 78 percent of the EU's average per capita GDP in 1990 to 98 percent in 2004, while Portugal went from 56

percent to 73 percent over the same period. Royo said that EU integration and Mexico's NAFTA experience have been similar in that all three countries have been able to compete more effectively in international markets and confront serious economic crises at home. Although both treaties began as economic unions, the EU is different because it is based in a political union built around the principles of solidarity, which informs its distributive policies.

Both Spain and Portugal were traditionally emigrant countries, but European citizenship and free movement among member countries has ended some of the past discrimination against immigrants and reversed historical patterns. Indeed, these two countries have recently become net recipients of immigrants, perhaps offering lessons for Mexico.

### **Immigration and Remittances**

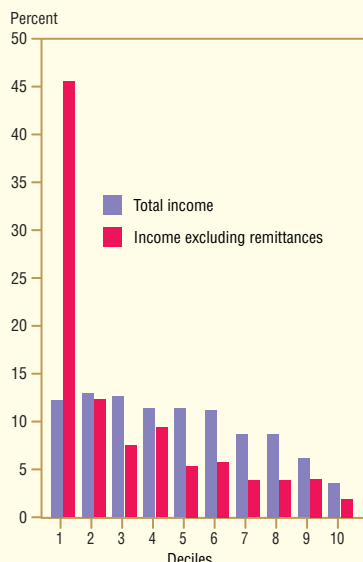
For most Mexicans who emigrate to the U.S., the attraction lies in the higher wages north of the border. A significant number of expatriate workers earn enough to send money to family in Mexico, providing a major source of income for many villages. The money has been flowing for decades, but the opening of Mexico's economy over the past dozen or so years has expanded the ways citizens working in the U.S. can send money home.<sup>3</sup>

Workers' remittances now occupy second place as a source of foreign exchange in Mexico, behind maquiladoras and ahead of tourism and foreign direct investment. The remittances have risen from \$84 million in 1960 (\$531 million in 2004 dollars) to \$16.6 billion in 2004, with an increase to \$20 billion estimated for 2005. Two advantages of remittances, when compared with other inflows, are that they have been stable and countercyclical.<sup>4</sup>

Few studies analyze the impact of remittances on developing economies, and even fewer look specifically at the impact on poverty levels. Gerardo Esquivel, a researcher at Colegio de México, began with a look at the extent of poverty in Mexico.

He used three poverty definitions: food poverty, capabilities poverty and assets poverty, meant to be roughly equivalent to extreme poverty, poverty and moderate poverty. (1) A household is considered to be food-based poor if its net per capita income is less than the amount of money necessary to cover basic food expenses. This category included 20 percent of

**Chart 2**  
**Remittances Affect Income**  
**Distribution for Mexican**  
**Households**



SOURCE: Gerardo Esquivel, "Remittances and Poverty in Mexico: A Propensity Score Matching Approach," Federal Reserve Bank of Dallas conference, Nov. 18, 2005.

Mexico's population in 2002. (2) A household is in capabilities poverty if its members cannot afford to cover their basic expenses of food, health and education. This applies to 26.5 percent of the population. (3) A household is in assets-based poverty if its members cannot cover expenses of food, health, education, clothing, home and public transportation. About half of Mexico's population fits into this category.

Esquivel then considered the impact of remittances on poverty in Mexico.<sup>5</sup> In 2002, about 6 percent of Mexican households received money in remittances—3 percent of urban households and 10 percent of rural families. Most households receiving remittances are in central and southern Mexico. They are not concentrated in the poorest states—such as Chiapas, Guerrero, Oaxaca, Puebla and Veracruz—because the costs of getting into the U.S. make it difficult for someone with extremely limited funds to migrate. Instead, the remittances go to better-off states such as Michoacan, Durango, Guanajuato and Zacatecas. These four states are home to more than one-third of all Mexican households receiving remittances.

Esquivel found that Mexico's income

distribution is remarkably more uniform once remittances are taken into consideration (*Chart 2*). For example, over 45 percent of all households that receive remittances would fall in the bottom 10 percent of the income distribution if the remittances were removed. However, only 12 percent of these households still belong to the lowest decile if remittances are included in their income.

Esquivel analyzed the impact of remittances on poverty levels through a propensity score approach that matches households receiving remittances with other households that have similar characteristics. His findings suggest that receiving remittances—regardless of the amount—reduces the household's probability of being in poverty by 10 to 14 percent, depending on the poverty measure used.

Studies differ on whether migrants to the U.S. are drawn from the bottom or top of Mexico's educational distribution. The uncertainty stems from a lack of data representative of the entire Mexican population and inadequate techniques to combine U.S. and Mexican statistics.

Alfredo Cuecuecha, a professor at Instituto Tecnológico Autónomo de México, studied Mexican immigrants' educational characteristics by using sophisticated methods to compare U.S. and Mexican census data and adjust for the U.S. undercount of Mexican immigrants. He concluded that for 2000 the three groups with the highest migration probability were, in descending

order, those with nine to 12 years of education, those with zero years of education and those with 13 to 16 years of education (*Chart 3*).

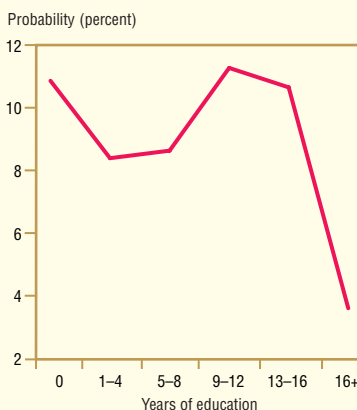
It is not clear how to explain this non-linear pattern because wage differentials between the U.S. and Mexico are larger for the least educated and decline with the level of education. Cuecuecha cited the following hypotheses from current research literature. Declining migration costs for those with more education—possibly related to greater English proficiency among the more educated—could explain the larger migration of individuals with medium levels of education. Limits on access to credit may explain why the groups with low education cannot afford to migrate. Cuecuecha noted that individuals in Mexico do not have access to unemployment insurance, which implies that in cases of unemployment, they must rely on the informal economy or their families. Because poverty is related negatively to education, individuals who have low levels of education have too much to lose if they migrate because the U.S. will not provide unemployment insurance either, and their social network has stayed in Mexico.

### Closely Knit Economies

The integration of the U.S. and Mexican economies is well-established—but it is changing in an era of increasing globalization. Evidence of deepening ties can be

*(Continued on back page)*

**Chart 3**  
**Probability of Migration for**  
**Mexican Males**



NOTE: Sample consists of Mexican males 25 to 58 years old in the labor force. All Mexicans in the U.S. sample entered after their 17th birthday.  
 SOURCE: 2000 U.S. census; 2000 Mexican census; author's calculations.

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found in the extent and importance of trade, the continued growth of remittances, the importance of the maquiladora sector in synchronizing the two economies and the need to make our economies more competitive through sectoral and institutional reforms.

Mexico's macroeconomic picture has improved greatly over the past decade, but there is room for continued gains from reforms. According to most estimates, Mexico's current 3 to 4 percent GDP growth is bumping against the ceiling of its potential rate. To improve the potential rate to 6 percent or higher, changes are needed in Mexico's basic institutional fabric. More specifically, Mexico desperately needs tax, energy and labor reforms.<sup>6</sup>

The closeness of the U.S. and Mexican economies raises interesting issues, which researchers are exploring in new and insightful ways. For example, Chinese trade with the U.S. has been based on significant cost advantages, and it has displaced Latin American and Mexican products from the U.S. market. Although a more expensive Chinese currency would help Latin America, it may only be a short-run solution. More than half of China's gains over Latin America are based on more rapidly rising Chinese productivity. The international productivity race reinforces the need for regional reforms.

Both trade and remittances have worked to help households near the bottom of the income ladder in Mexico. In regions

closely tied to globalization, trade has increased the demand for unskilled labor and raised unskilled wages relative to skilled. In addition, remittances have pulled a significant number of Mexican households out of the bottom 10 percent of the income distribution and significantly reduced the probability that they remain in even moderate poverty.

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## Notes

Conference presentations can be found on the Dallas Fed web site at [www.dallasfed.org/news/research/2005/05us-mexico.html](http://www.dallasfed.org/news/research/2005/05us-mexico.html).

<sup>1</sup> From 1980 to 1993, the correlation coefficient between the coincident indexes of economic activity in the U.S. and Mexico was 0.73. This same measure increased to 0.96 between 1993 and 2004.

<sup>2</sup> "U.S.-Mexico Trade: Are We Still Connected?" by Jesus Cañas and Roberto Coronado, Federal Reserve Bank of Dallas *Business Frontier*, Issue 3, 2004.

<sup>3</sup> "Workers' Remittances to Mexico," by Roberto Coronado, Federal Reserve Bank of Dallas *Business Frontier*, Issue 1, 2004.

<sup>4</sup> "Workers' Remittances: An Important and Stable Source of External Development Finance," by Dilip Ratha, in *Global Development Finance*, Washington, D.C.: The World Bank, 2003.

<sup>5</sup> "Remittances and Poverty in Mexico: A Propensity Score Matching Approach," by Gerardo Esquivel and Alejandra Huerta-Pineda, Colegio de México, Working Paper, 2005.

<sup>6</sup> "Trade, Manufacturing Put Mexico Back on Track in 2004," by Jesus Cañas, Roberto Coronado and Robert W. Gilmer, Federal Reserve Bank of Dallas *Houston Business*, March 2005.



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